



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/567,119 | 01/18/2007 | Masahiro Yamakawa | 4670-0118PUS1 | 3002 |

2292 7590 02/04/2010
BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

| |
|----------|
| EXAMINER |
|----------|

THOMAS, JAISON P

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1796

| | |
|-------------------|---------------|
| NOTIFICATION DATE | DELIVERY MODE |
|-------------------|---------------|

02/04/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/567,119 | Applicant(s) YAMAKAWA ET AL. | |
| | Examiner Jaison P. Thomas | Art Unit 1796 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/18/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 12/18/2009 has been entered.
2. Claims 10-14 are pending.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

Art Unit: 1796

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 10 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 11 of copending Application No. 10/549480. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are broader in scope and are fully encompassed by the scope of the claims in the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

Art Unit: 1796

art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamakawa et al. (US Patent App. Pub. No. 2002/0034686) in view of Nissen et al. (US Patent 6341057).

Yamakawa et al. disclose, in example 2, a polymer binder for electrode comprising 84 parts of 2-ethylhexyl acrylate (i.e. reads on monomer unit "a"), 10 parts of methacrylonitrile (i.e. reads on monomer "b"), 2 parts of methacrylic acid (i.e. reads on monomer unit "c") (para. 0100). The binder can be used in batteries such as electric double layer capacitor (para. 0004). The slurry comprises binder, active material and optional additives (para. 0057). As specific examples of the active material there can be mentioned carbonaceous material (para. 0059). As specific examples of the additives mention can be made of cellulose materials such as carboxymethyl cellulose (para. 0055) which reads on the thickener of instant claim 13 and is added at 1 part by weight in Example 1 (para. 0098). The electrode is fabricated by a procedure wherein a collector such as metal foil is coated with the slurry and thus formed coating is dried whereby the active material is fixed (i.e. bound) on the surface of collector (para. 0065). The battery comprises electrode and an electrolyte solution (para. 0070).

Yamakawa et al. differ with respect to the electrolyte, and silent with respect to the glass transition temperature of binder polymer.

However, Nissen et al. teach double layer capacitors (Abstract) comprising current collectors, carbon electrodes with a polymer binder (col. 3, lines 36-39). The double layer capacitors based on tetraalkyl-ammonium salts have a high capacitance and higher power capability than double layer capacitors using electrolyte compositions of others like lithium salts. The formation of the interface layer appears highly dependent on ionic species of the electrolyte. The excellent performance of double layer capacitors on tetraalkyl-ammonium salts is ascribed to little, thin, stable and dense interface layers being formed at the electrode-electrolyte interface of such capacitors, allowing a narrow charge separation and a high capacitance. Examples of tetraalkyl ammonium salts include tetraethylammonium tetrafluoroborate and tetraethylammonium hexafluorophosphate (col. 4, lines 34-67). Therefore, in light of the teachings in Nissen et al, it would have been obvious to one skilled in art at the time invention was made to use the electrolytes of Nissen et al in the electric double layer capacitor of Yamakawa et al, for above mentioned advantages.

With respect to the glass transition temperature of the polymer, the Examiner respectfully submits that said property would be reasonably expected to be possessed by the prior art polymer as both the claimed polymer and prior art polymer contain similar components at similar percentages.

Allowable Subject Matter

7. The Examiner has carefully considered the comparative data shown in the Specification on Tables 1-2 on pg. 29. The Examiner suggests Applicants file additional comparative data and limit the scope of the claims in order to render pending claims allowable. Suggestions for the data showing include additional examples of copolymers with glass transition temperatures above 0 deg and below 10 deg C. Additionally, amending the claims to include weight percentages of the constituent monomer units commensurate with the showings of the data would be helpful. The Applicants are invited to contact the Examiner at the phone number below in order to discuss any potential amendments as suggested above to facilitate the application to allowance.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison P. Thomas whose telephone number is (571) 272-8917. The examiner can normally be reached on Mon-Fri 9:30 am to 6:00 pm.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P. T./
Examiner, Art Unit 1796

/Mark Kopec/
Primary Examiner, Art Unit
1796